

Name \_\_\_\_\_

Date \_\_\_\_\_

PreCalculus - Unit Exam - Properties of Real Numbers - A

Folder # \_\_\_\_\_

Period \_\_\_\_\_

MC \_\_\_\_\_ CR1 \_\_\_\_\_ CR2 \_\_\_\_\_ CR3 \_\_\_\_\_

Score \_\_\_\_\_

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use an inequality to describe the interval of real numbers.

1)  $x$  is between -3 and 5.

A)  $-5 < x < 3$

B)  $x \leq 5$

C)  $-3 < x < 5$

D)  $-3 \leq x \leq 5$

1) \_\_\_\_\_



2)  $x < -4$

B)  $x \leq -4$

C)  $x \geq -4$

D)  $x > -4$

2) \_\_\_\_\_

Use interval notation to describe the interval of real numbers.

3)  $x \leq -6$

A)  $(-6, \infty)$

B)  $[-6, \infty)$

C)  $(\infty, -6)$

D)  $(-\infty, -6]$

3) \_\_\_\_\_

Use words to describe the interval of real numbers.

4)  $x < -8$

- A) The real numbers greater than or equal to -8.
- B) The real numbers less than -8.
- C) The real numbers greater than -8.
- D) The real numbers less than or equal to -8.

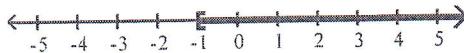
4) \_\_\_\_\_

5)  $(-2, 4)$

- A) The real numbers less than 4.
- B) The real numbers greater than or equal to -2 and less than 4.
- C) The real numbers greater than -2.
- D) The real numbers greater than -2 and less than 4.

5) \_\_\_\_\_

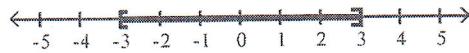
6)



- A) The real numbers greater than or equal to -1.
- B) The real numbers less than -1.
- C) The real numbers greater than -1.
- D) The real numbers greater than or equal to 1.

6) \_\_\_\_\_

7)



- A) The real numbers greater than or equal to -3 and less than or equal to 3.
- B) The real numbers greater than or equal to -3.
- C) The real numbers greater than -3 and less than 3.
- D) The real numbers greater than -3 and less than or equal to 3.

7) \_\_\_\_\_

Use interval notation to describe the interval of real numbers.

8)  $x$  is greater than -4 and less than 0.

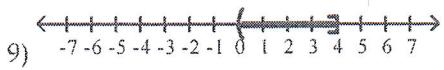
A)  $(-4, 0]$

B)  $[-4, 0]$

C)  $(-4, 0)$

D)  $[-4, 0)$

8) \_\_\_\_\_

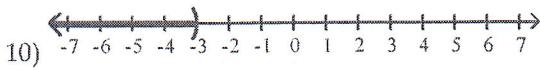


- A)  $[0, 4]$       B)  $(0, 4)$

C)  $(0, 4]$

D)  $[0, 4]$

9) \_\_\_\_\_



- A)  $(-\infty, -3]$       B)  $(-3, -\infty)$

C)  $(-\infty, -3)$

D)  $[-3, \infty)$

10) \_\_\_\_\_

11)  $x$  is negative.

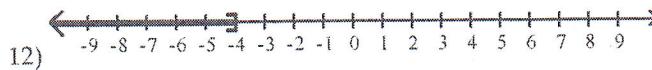
- A)  $(0, \infty)$       B)  $(-\infty, -1)$

C)  $(-1, \infty)$

D)  $(-\infty, 0)$

11) \_\_\_\_\_

Use an inequality to describe the interval of real numbers.



- A)  $x < -4$       B)  $x \geq -4$

C)  $x \leq -4$

D)  $x > -4$

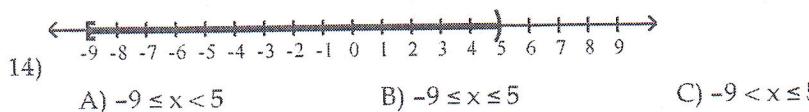
12) \_\_\_\_\_

- 13)  $[-8, 4)$   
A)  $-8 \leq x \leq 4$       B)  $-8 \leq x < 4$

C)  $x < 4$

D)  $-8 < x \leq 4$

13) \_\_\_\_\_



- A)  $-9 \leq x < 5$       B)  $-9 \leq x \leq 5$

C)  $-9 < x \leq 5$

D)  $-9 < x < 5$

14) \_\_\_\_\_

- 15)  $x$  is between  $-2$  and  $4$ .  
A)  $-2 < x < 4$       B)  $-4 < x < 2$

C)  $-2 \leq x \leq 4$

D)  $x \leq 4$

15) \_\_\_\_\_

- 16)  $x$  is between  $-3$  and  $4$ .  
A)  $-3 < x < 4$       B)  $x \leq 4$

C)  $-3 \leq x \leq 4$

D)  $-4 < x < 3$

16) \_\_\_\_\_

- 17)  $x$  is between  $-4$  and  $6$ .  
A)  $-4 < x < 6$       B)  $x \leq 6$

C)  $-4 \leq x \leq 6$

D)  $-6 < x < 4$

17) \_\_\_\_\_

Use interval notation to describe the set of numbers.

- 18) Every item in Albert's Variety store costs less than \$3.85.  
A)  $[0, 3.85]$       B)  $[1, 3.85)$

C)  $[0, 3.85]$

D)  $[1, 3.85]$

18) \_\_\_\_\_

Identify the base. Do not evaluate.

- 19)  $(-14)^8$   
A)  $-14$       B)  $14$

C)  $-8$

D)  $8$

19) \_\_\_\_\_

Simplify the expression. Assume that the variables in the denominator are nonzero.

- 20)  $\left( \frac{30a^7b^7}{ab^4} \right) \left( \frac{2b^2}{6a^3b^9} \right)$   
A)  $\frac{5a^3}{b^4}$       B)  $10a^3b^4$

C)  $\frac{10a^3}{b^4}$

D)  $\frac{1}{10a^3b^4}$

20) \_\_\_\_\_

Write the number in scientific notation.

- 21) 0.000000739014  
A)  $7.39014 \times 10^{-9}$       B)  $7.39014 \times 10^{-8}$       C)  $7.39014 \times 10^{-7}$       D)  $7.39014 \times 10^8$

21) \_\_\_\_\_

Write the number in decimal form.

- 22)  $4.0336 \times 10^5$   
A) 40,336      B) 403,360      C) 201.68      D) 4,033,600

22) \_\_\_\_\_

- 23)  $6.0357 \times 10^{-7}$   
A) 0.00000060357      B) 0.00000060357      C) -60,000      D) 0.0000060357

23) \_\_\_\_\_

- 24)  $7.79 \times 10^3$   
A) 77,900      B) 233.7      C) 779      D) 7790

24) \_\_\_\_\_

- 25)  $1.35 \times 10^{-4}$   
A) 0.0000135      B) -135,000      C) 0.00135      D) 0.000135

25) \_\_\_\_\_

Write the number in scientific notation.

- 26) 87,735  
A)  $8.7735 \times 10^4$       B)  $8.7735 \times 10^{-4}$       C)  $8.7735 \times 10^1$       D)  $8.7735 \times 10^5$

26) \_\_\_\_\_

- 27) 0.00004139  
A)  $4.139 \times 10^{-5}$       B)  $4.139 \times 10^4$       C)  $4.139 \times 10^5$       D)  $4.139 \times 10^{-4}$

27) \_\_\_\_\_

- 28) 742.2  
A)  $7.422 \times 10^3$       B)  $7.422 \times 10^{-2}$       C)  $7.422 \times 10^{-3}$       D)  $7.422 \times 10^2$

28) \_\_\_\_\_

Simplify the expression. Assume that the variables in the denominator are nonzero.

- 29)  $\frac{(5x^4)^2 z^3}{5z^5}$   
A)  $\frac{x^8}{z^2}$       B)  $\frac{x^8}{5z^2}$       C)  $\frac{5x^8}{z^2}$       D)  $5x^8 z^2$

29) \_\_\_\_\_

- 30)  $\left(\frac{4}{y^8}\right)^2$   
A)  $\frac{4}{y^{16}}$       B)  $\frac{16}{y^8}$       C)  $\frac{16}{y^{16}}$       D)  $\frac{y^8}{16}$

30) \_\_\_\_\_

- 31)  $\frac{(x-4y^3)^{-4}}{(y^3x-6)^{-5}}$   
A)  $\frac{x^{14}}{y^3}$       B)  $\frac{y^3}{x^8}$       C)  $\frac{y^3}{x^{14}}$       D)  $\frac{x^8}{y^3}$

31) \_\_\_\_\_

**Identify the base. Do not evaluate.**

32)  $-(-3)^6$

A) -3

B) 6

C) -6

D) 3

32)

33)  $-7^{14}$

A) 14

B) 7

C) -7

D) -14

33)

34)  $14^{11}$

A) 154

B) 11

C) 14

D) -11

34)

**Use interval notation to describe the set of numbers.**

35) The cost of a computer is more than \$987 and less than \$5423.

A) [987, 5423]

B) (987, 5423)

C) [5423, 987]

D) [987, 5423)

35)

36) The price of a computer varies from \$936 to \$5324.

A) (936, 5324]

B) [936, 5324)

C) [5324, 936]

D) [936, 5324]

36)

37) Salary raises at Clemson University will average between 3% and 5.5%.

A) [5.5, 3]

B) [3, 5.5)

C) (3, 5.5)

D) [3, 5.5]

37)

## Answer Key

Testname: P.CP.S1.REVIEW

- 1) C
- 2) D
- 3) D
- 4) B
- 5) D
- 6) A
- 7) A
- 8) C
- 9) C
- 10) C
- 11) D
- 12) C
- 13) B
- 14) A
- 15) A
- 16) A
- 17) A
- 18) C
- 19) A
- 20) C
- 21) B
- 22) B
- 23) B
- 24) D
- 25) D
- 26) A
- 27) A
- 28) D
- 29) C
- 30) C
- 31) C
- 32) A
- 33) B
- 34) C
- 35) B
- 36) D
- 37) C